5PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Complete if Known Application Number 09/872.063 June 1, 2001 Filing Date Yuk-Ming Dennis Lo First Named Inventor Art Unit Examiner Name Jeannine Anne Goldberg

(Use as many sheets as necessary)

ite for form 1449A/PTO

BTG0010-100 (142480US02) of 5 Sheet Attorney Docket Number

		Document Number		Name of Patentee or Applicant	
Examiner Cite Initials No.1	Cite No. <sup>1</sup>	Number - Kind Code <sup>2</sup> (if known)	Publication/Issue/Filing Date MM-DD-YYYY	of Cited Document	Pages, Columns, Lines, Where Relevan Passages or Relevant Figures Appear
X	AP	6,664,056	12/16/2003	Lo et al.	
	<u> </u>				
					<u> </u>

	FOREIGN PATENT DOCUMENTS					
Examiner Cite Initials* No.	Cito	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)		Applicant of Cited Document		T <sup>6</sup>
					-	
	<u> </u>					
	i	•	1			

Examiner Signature	Q	oldberg	Date Considered	\$19/04

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered, include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1,97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS, SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08b(08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

ADS Stitute for form 1449B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet of 5

Complete if Known				
Application Number	09/872,063			
Filing Date	June 1, 2001			
First Named Inventor	Yuk-Ming Dennis Lo			
Art Unit	1634			
Examiner Name	Jeannine Anne Goldberg			
Attomey Docket Number	BTG0010-100 (142480US02)			

	,	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
X	AQ	Kamm et al., "Nucleic acid Concentration in Normal Human Plasma", Clinical Chemistry, 1972, Vol. 18(6):519-522.	
Ψ	AR	Leon et al., "Free DNA in the Serum of Rheumatoid Arthritis Patients", <u>Journal of Rheumatology</u> , 1977, Vol. 4(2): 139-143.	
	AS	Cox et al., "DNA Concentrations in Serum and Plasma", Clinical Chemistry, 1977, Vol. 23: 297.	
	AT	Raptis et al., "Quantitation and Characterization of Plasma DNA in Normals and Patients with Systemic Lupus Erythematosus" <u>Journal of Clinical Investigation</u> , 1980, Vol. 66: 1391-1399.	
	AU	Martin et al., "A Method for Using Serum or Plasma as a source of DNA for HLA Typing," Human Immunology, 1992, Vol. 33: 108-113.	
Emanuel et al., "Amplification of Specific Gene Products from Human Serum,"  GATA, 1993, 10(6): 144-146.			
1 Ι Ι Δ\Λ/ Ι		Yamamoto, et al., "Anti-ssDNA and dsDNA antibodies in Preeclampsia"; <u>Asia Oceania J Obstet Gynaecol</u> . 1994 Mar; 20(1): 93-9. [PubMed Abstract cited only]	
	AX	Nawroz, et al., "Microsatellite alterations in serum DNA of head and neck cancer patients," Nature Medicine, 1996, Vol. 2: 1335-1337.	
AY Mulcahy, e		Mulcahy, et al. "Cancer and mutant DNA in blood plasma," Lancet, 1996, Vol. 348: 628.	
	AZ	Chen et al., "Microsatellite alternations in plasma DNA of small cell lung cancer patients," Nature Medicine, 1996, Vol. 2: 1033-1035.	
	ВА	Douglas et al., "Trophoblast in the Circulating Blood during Pregnancy"  American Journal of Obstetrics and Gynecology, 1959, Vol. 78: 961-973.	
V	ВВ	Walknowska et al., "Practical and Theoretical implications of fetal/maternal lymphocyte transfer," The Lancet, 7 June 1969, 1119-1122.	

	Examiner Signature	Q. Goldbug	Date Considered	8/19/04
--	-----------------------	------------	--------------------	---------

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional).

Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. 1450.

PTO/SB/08b(08-03) Approved for use through 07/31/2006, OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Complete if Known

09/872,063

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Application Number

ubstitute for form 1449B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Filing Date June 1, 2001 First Named Inventor Yuk-Ming Dennis Lo Art Unit 1634

(Use as many sheets as necessary)

Sheet of 5

Examiner Name	Jeannine Anne Goldberg
Attorney Docket Number	BTG0010-100 (142480US02)

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
(7H	вс	Strickland et al., "Invasion of the Trophoblasts", Cell, 1992, Vol. 71:355-357	
T T	BD	Simpson et al., "Isolating Fetal Cells in Maternal Circulation for Prenatal Diagnosis", Prenatal Diagnosis, 1994, Vol. 14:1229-1242	
	BE	Priority application GB 97044440.0; 4 March 1997	
	BF	Saiki, R.K. et al., "Primer-Directed Enzymatic Amplification of DNA With A Thermostable DNA Polymerase," Science, 1988, Vol. 2239:487-491	
	BG	Kwok et al., "Avoiding False Positives With PCR," Nature, 1989; Vol. 339:237-238.	
	вн	Camaschella, C. et al., "Prenatal Diagnosis Of Fetal Hemoglobin Lepore-Boston Disease On Maternal Peripheral Blood," <u>Blood</u> , 1990; Vol. 75:2102-2106.	
	BI	Cherif-Zahar et al., Molecular Cloning And Protein Structure Of A Human Blood Group Rh Polypeptide," Proc. Natl. Acad. Sci., USA, 1990: Vol 87:6243-6247.	-
	BJ	Longo M.C., et al., "Use Of Uracil DNA Glycosylase To Control Carry-Over Contamination In Polymerase Chain Reactions," Gene, 1990; Vol. 93:125-128.	
	вк	Collin Y., et al., "Genetic Basis Of The RhD-Positive And RhD-Negative Blood Group Polymorphism As Determined By Southern Analysis," <u>Blood</u> 1991; Vol. 78:2747-2752.	
	8L	Frickhofen et al., "A Rapid Method Of Sample Preparation For Detection Of DNA Viruses In Human Serum By Polymerase Chain Reaction," J. Virological Methods, 1991; Vol. 35:65-72.	
	ВМ	Holland et al., "Detection Of Specific Polymerase Chain Reaction Product By Utilizing The 5'→3' Exonuclease Activity Of The Thermus Aquaticus DNA Polymerase," <u>Proc. Natl. Aca. Sci.</u> , USA 1991, Vol. 88:7276-7280.	
V	BN	Rebello M.T. et al., "Extraction Of DNA From Amniotic Fluid Cells For The Early Prenatal Diagnosis Of Genetic Disease," <u>Prenatal Diagnosis</u> , 1991; Vol. 11:41-46.	

Examiner Signature Q. Holdbag	Date Considered	8/19/04	
-------------------------------	--------------------	---------	--

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08b(08-03) Approved for use through 07/31/2006. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Complete if Known

BTG0010-100 (142480US02)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Attorney Docket Number

fute for form 1449B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number 09/872,063 Filing Date June 1, 2001 First Named Inventor Yuk-Ming Dennis Lo Art Unit 1634 Examiner Name Jeannine Anne Goldberg

(Use as many sheets as necessary)

Sheet of 5

	1	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
Sy.	во	Bianchi D.W., et al., "Detection Of Fetal Cells With 47, XY, +21 Karyotype In Maternal Peripheral Blood," <u>Hum. Genet.</u> , 1992; Vol. 90:368-370.	
	ВР	Elias S. et al., "First Trimester Prenatal Diagnosis Of Trisomy 21 In Fetal Cells From Maternal Blood," Lancet, 1992; Vol. 340:1033.	
	BQ	Le Van Kim et al., "Molecular Cloning And Primary Structure Of The Human Blood Group RhD Polypeptide," <u>Proc. Natl. Acad. Sci.</u> , USA 1992; Vol. 89:10925-10929.	
	BR	Bennett et al., "Prenatal Determination Of Fetal RhD Type By DNA Amplification," New England J. Medicine, 1993; Vol. 329:607-610.	
	BS	Hamada H. et al., "Fetal Nucleated Cells In Maternal Peripheral Blood: Frequency And Relationship To Gestational Age," <u>Hum. Genet.</u> , 1993: Vol. 91:427-432.	
	BT	Lee L. G., et al., "Allelic Discrimination By Nick-Translation PCT With Fluorogenic Probes," Nucleic Acids Research, 1993: Vol. 21:3761-3766.	
	BU	Simpson et al., "Isolating Fetal Cells From Maternal Blood: Advances In Prenatal Diagnosis Through Molecular Technology," <u>JAMA</u> 1993; Vol. 270:2357-2361.	
	BV	Bianchi et al., "Fetal Cells In Maternal Blood: Determination Of Purity And Yield By Quantitative Polymerase Chain Reaction," <u>Am. J. Obstet. Gynecol.</u> , 1994, Vol. 171:922-926.	
	BW	Livak et al., "Oligonucleotides With Fluorescent Dyes At Opposite Ends Provide A Quenched Probe System Useful For Detecting PCT Product And Nucleic Acid Hybridization," PCR Methods & Applications, 1995; Vol. 4:357-362.	
	вх	Bianchi et al., "Fetal Cell Quantitation In Maternal Blood Samples From Normal And Aneuploid Pregnancies," <u>Pediatr. Res.</u> 1996; Vol. 39:142A.	
1	ВҮ	Cheung M.C. et al., "Prenatal Diagnosis Of Sickle Cell Anaemia And Thalassaemia By Analysis Of Fetal Cells In Maternal Blood," Nature Genetics, 1996; Vol. 14:264-268.	
4	вz	Geifman-Holtzman O., et al., "Fetal RhD Genotyping In Fetal Cells Flow Sorted From Maternal Blood," Am. J. Obstet. Gynecol., 1996; Vol. 174:818-822.	

Examiner Signature	Of Monodhua	Date Considered	Slialor
Signature	VI. DUCYDUG	Considered	0/19/04

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND TESES OF COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450. FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08b(08-03) Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

Sheet

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

of 5

Complete if Known				
Application Number	09/872,063			
Filing Date	June 1, 2001			
First Named Inventor	Yuk-Ming Dennis Lo			
Art Unit	1634			
Examiner Name	Jeannine Anne Goldberg			
Attorney Docket Number	BTG0010-100 (142480US02)			

-		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
S	CA	Heid et al., "Real Time Quantitative PCR," Genome Research, 1996; Vol. 6:986-994.	
	СВ	Sekizawa A. et al., "Prenatal Diagnosis Of The Fetal RhD Blood Type Using A Single Fetal Nucleated Erythrocyte From Maternal Blood," <u>Obstet. &amp; Gynecol.</u> , 1996; Vol. 87:501-505.	
	СС	Aubin J.T., et al., Specificity And Sensitivity Of RhD Genotyping Methods By PCR-Based DNA Amplification," <u>British J. Haernatology</u> , 1997; Vol. 98:356-364.	
	CD	Sohda S., et al., The Proportion Of Fetal Nucleated Red Blood Cells In Maternal Blood: Estimation By FACS Analysis," <u>Prenatal Diagnosis</u> ; August 1997; Vol. 17:743-752.	
	CE	Lo Y.M. Dennis et al., Prenatal Genetic Analysis From Maternal Blood, Lab Medica International, 1991, Vol. 8:25-27.	
	CF	Lo Y.M. Dennis et al., Culture Of Fetal Erythroid Cells From Maternal Peripheral Blood," Lancet, 1994, Vol. 344:264-265.	
	CG	Lo Y.M. Dennis et al., Prenatal Determination Of Fetal Rhesus D Status By DNA Amplification Of Peripheral Blood Of Rhesus-Negative Mothers," Annals Of The N.Y. Academy Of Sciences, 1994, Vol. 731:229-236.	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	СН	Fowke et al., "Genetic Analysis Of Human DNA Recovered From Minute Amounts Of Serum Or Plasma," <u>Journal Of Immunological Methods</u> , 1995, Vol. 180:45-51.	
			.,

Examiner Signature	J. Localberg	Date Considered	8/19/84

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.